



CSIR - Central Road Research Institute  
केन्द्रीय सड़क अनुसंधान संस्थान

# CSIR CRRI Newsletter

सीएसआईआर-सीआरआरआई समाचार पत्रिका



ISSUE No. 41 & 42

October 2013 - March 2014

## MAJOR PROJECTS UNDERTAKEN

### Assessment of Odisha Road Network using Falling Weight Deflectometer and Automated Road Survey System

The Works Department of Government of Odisha is currently in the process of developing an Asset Management System (AMS) for the State Road Network of Odisha. The proposed system, which is expected to be developed, would facilitate rationalizing the decision making process in the allocation of resources towards ensuring:

- (i) Best/Optimal use of public funds and
- (ii) Preserving the road network at an acceptable level of serviceability.

To fulfill the above stand objective, the Odisha PWD requested CRRI to undertake a project involving collection of data on Road Inventory, Pavement

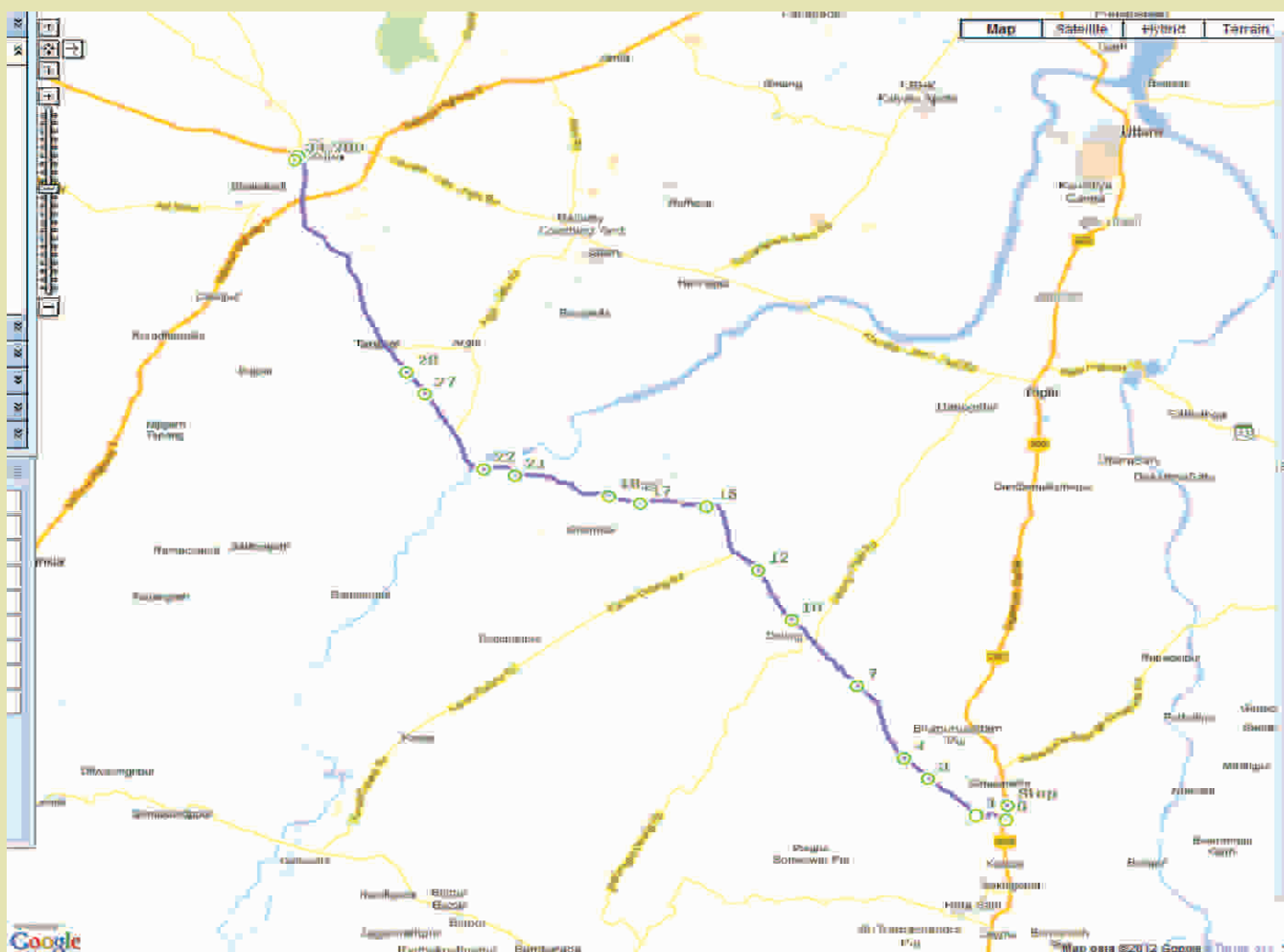


Fig. 1: A Typical Layout (Blue Line) of Map Generated from the Data obtained by using ARSS on one of the State Highway in Odisha

Condition and Deflection using modern equipments and State-of-Art technologies such as Automated Road Survey System and Falling Weight Deflectometer on the selected road network of 800 kms in the State of Odisha.

In order to accomplish the study, state-of-art equipments namely Automated Road Survey System (ARSS) and Falling Weight Deflectometer (FWD) were deployed to collect the needed data on the network in question. Fig. 1 shows a typical layout of



Fig. 2 : Measurements using ARSS in Progress



Fig. 3 : Measurements using FWD in Progress

map generated from the data obtained by using ARSS on Ring Road. Fig. 2 and Fig. 3 show the measurements being taken using ARSS and FWD respectively on the project roads.

The report is currently under preparation and would include data on Road inventory, Pavement condition and FWD Deflection for 800 kms of the road networks in Odisha State.

## Development of Database Management System for Delhi PWD Roads (Ring Road and Outer Ring Road)

Delhi, PWD instituted an assignment to CRRI which aims to develop Data Base Management System for a length of about 100 kms covering Ring Road and Outer Ring Road in Delhi. The overall objective of

this study is to evaluate Pavement Condition and to Develop Database Management System for Ring Road and Outer Ring Road with the ultimate aim to maintain and manage roads at a desired level of



Fig. 4 : A Typical Layout (Blue Line) of Map Generated from the Data obtained by using ARSS on Ring Road

serviceability. As part of this project, it was desired that the data/information on road inventory and pavement condition be collected by using State-of Art Equipments available with the Institute.

In order to accomplish the study, State-of art equipments namely Automated Road Survey System (ARSS), Falling Weight Deflectometer (FWD) and Weigh-In-Motion System are proposed to be used on the study network. The other field works / surveys proposed include Benkelman Beam Deflection (BBD), Traffic Volume Counts, Visual Distress Rating and Test Pits Evaluation. The recommendations on Strengthening / Rehabilitation requirements will be given based on deflection data collected through Benkelman Beam equipment. Fig. 3 shows a typical layout of map generated from the data obtained by using ARSS on Ring Road while Fig. 5 shows a typical view of BBD measurements.

The report to be submitted to Delhi PWD would include recommendations on Strengthening /

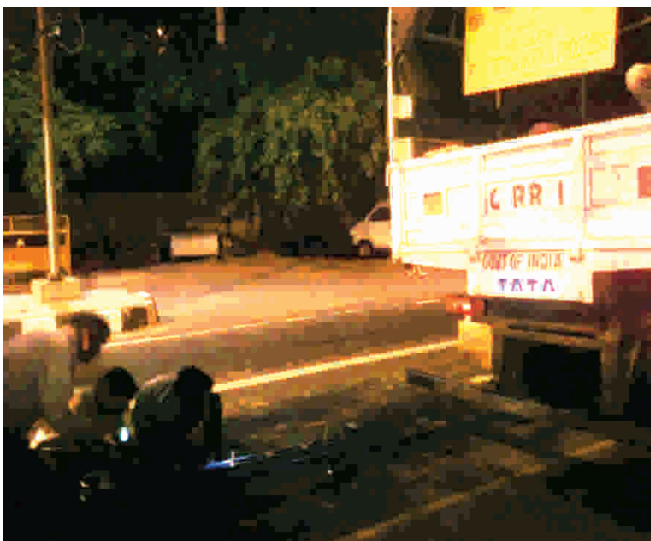


Fig. 5 : Deflection Measurements Using Benkelman Beam on Ring Road

Rehabilitation requirements. Also, a Data Base Management System for Ring Road and Outer Ring Road which are under the jurisdiction of Delhi PWD will be developed.

## WORKSHOPS / MAJOR EVENTS

### Workshop on “Road Construction Machinery: Creating Benchmark”

CSIR-CRRI organized a workshop on “Road Construction Machinery: Creating Benchmark” on October 25-26, 2013 at Bengaluru, in collaboration with VOLVO, MoRTH, IRC and Karnataka PWD. The workshop was inaugurated by Prof. CEG Justo, eminent expert in highway engineering. Shri C. Kandasamy, Director General (Road Dev.) & Spl. Secretary, MoRTH, Dr. Shyam Chetty, Director, CSIR-NAL, Shri Vishnu Shankar Prasad, Secretary General, Indian Roads Congress were also present. The workshop was intended to promote global standards in Road Construction Technology considering the need for proper benchmarking in machine technology towards achieving overall operational efficiency in machine usage.

The workshop received overwhelming support from MoRTH, IRC and Karnataka PWD, and key note addresses were made by senior government officials from these organizations. In addition, presentations were made in different session by various equipment manufacturers / suppliers, covering Crushers, Compaction equipments, Hot Mix Plants, Paving machinery, Transportation trucks, Materials



A view of the workshop in progress

handling equipment, Intelligent Construction Methods etc.

Dr. S. Gangopadhyay, Director, CSIR-CRRI, urged the need to establish benchmark for Construction Methods and Machinery Specifications to address the current issues in machinery utilization. A need was also felt on joint initiatives to address skill development for equipment operators and engineers with the support of MoRTH, CSIR-CRRI and construction industry to develop reliable, durable, economical and smart infrastructure in India.



## Workshop to discuss the Prospects of using Information Technology for the project titled, “Development of Indian Highway Capacity Manual (Indo-HCM) for Indian Traffic Conditions”

A half day workshop to discuss the prospects of using Information Technology for the purpose of data collation and data analysis was held at CSIR-CRRI on 31.10.2013 under the Chairmanship of Director, CSIR-CRRI. During this workshop, presentations were given by Mr. Pradip Chatterjee, Prof. Gunasekaran and Prof. Sudhip Kumar Roy who



shared their experiences of using Information Technology for the purpose of extracting traffic volume and speed data from the video and other techniques of data collection. It is expected that the new techniques of data extraction can be suitably deployed for Indo-HCM study, currently underway at CSIR-CRRI.

## National Seminar on “Recycling of Bituminous Pavements”

Reclamation of stone aggregates by recycling and / or reuse of old pavement materials is a very powerful concept. While there are various techniques available for bituminous pavement rehabilitation, recycling of existing pavement materials to produce fresh pavement layers is the preferred solution since it results in considerable savings of stone aggregates. In addition, recycling offers substantial savings in cost of material and haulage, helps in resource conservation, and can improve pavement performance.



A View of the Seminar



Shri Oscar Fernandes, Hon'ble Union Minister of MoRTH  
Inaugurating the Seminar on Recycling of Bituminous Pavements

The clear understanding of issues related to reclamation of roads in the country and introducing an appropriate technology system is imperative and imminent. This involves bringing together researchers, industry, users and administration on a common platform to deliberate and to have a deep insight of issues involved.

To realise this need, a two day National Seminar on “Recycling of Bituminous Pavements (NASERBIP)” was organised on January 15-16, 2014.

Shri Oscar Fernandes, Hon'ble Union Minister for Road Transport and Highways graced the occasion by inaugurating and addressing the gathering.

A total of about 250 delegates attended the workshop which included researchers, academicians, industry partners, practicing engineers and students. Participation of many young researchers was the main highlight of the event.

The event was sponsored by many organisations, who also made their points through the forum. The two day seminar was moduled through seven technical sessions and many acclaimed personalities shared their experience through the proceedings. The valedictory address was given by Shri Manish Sisodia, Hon'ble minister of PWD, Govt. of Delhi. The two day seminar concluded that



Shri Manish Sisodia, Hon'ble Minister of PWD, Govt. of Delhi addressing the Seminar

technology of recycling may be implemented towards making our road development activity a most sustainable one.

### CRRRI Welcomes New Year

A CRRRI staff get-together was organised on the occasion of New Year Day at CRRRI on 1st January, 2014. At the outset Shri T.K. Amla, Head, ILT welcomed all CRRRI staff members. Dr. S. Gangopadhyay, Director, CRRRI in his address highlighted the achievements of the institute during the preceding year (2013) and expressed the hope that scientists and technologists will do more R&D work in the coming year to meet the growing challenges. Dr. S. Gangopadhyay, Director also extended best wishes to all the staff members and their family.



A View of New Year Celebration

## National Science Day

The National Science Day was celebrated on Feb. 28 2014 to commemorate the great discovery “Raman Effect” made by Nobel Laureate Prof. C.V. Raman in 1928. The occasion was marked by the observance of an Open day where in the laboratories of the Institute were kept open to general public and school children. Besides, a special function was arranged to pay homage to Noble Laureate. Mr. Jose Kurian, Chief Engineer, Delhi Tourism and Transportation Development Corporation was the Chief Guest and gave a talk on “Sustainability in Concrete Industry”.



Glimpses of National Science Day

## Workshop on R&D Technologies in Rural Road under PMGSY

In order to promote cost-effective and fast construction technology in development and management of rural roads, a workshop on “R&D Technology for Rural Roads” was organized for NRRDA state-level Nodal Officer from 25-27 February 2014 at CRRI. The Workshop focused on promoting use of locally available marginal material, industrial wastes, new materials, environmental friendly technologies and modern condition survey

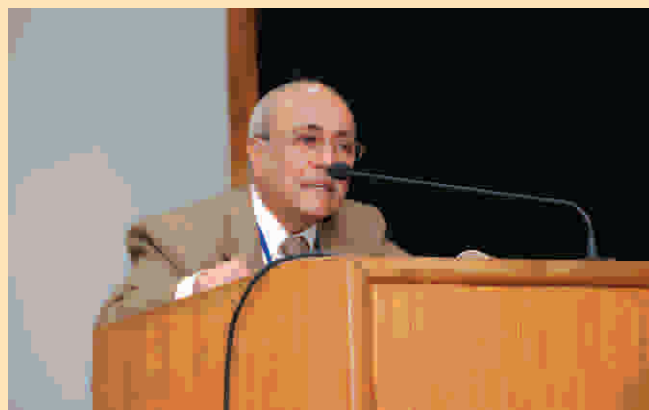
equipment. About 45 engineers from various State Rural Road Development Agencies were participated in the programme. The workshop also paved a way to promote and disseminate the R&D technologies evolved by the Institute.

During the workshop lecture cum demonstration were given to the participants by CRRI Scientist and faculty members from other organisation. The workshop was appreciated by the user agencies.



## Workshop on “Alternative Pavement Materials and Application of GHG Assessment Tool”

Indian road transportation infrastructure is rapidly expanding with the ambitious development of road networks, while these road development projects help in adding considerable infrastructural assets, their construction however adds to greenhouse gas (GHG) emissions. This necessitates the need to reduce GHG emissions and incorporating environment friendly construction technology as well as innovative materials / technologies to mitigate negative impacts of road construction sector. CSIR-CRRI and International Road Federation (India Chapter) has jointly organized a workshop on “Alternative Pavement Materials and Application of GHG Assessment Tool”, on January 28, 2014 at CRRI which was aimed to bring down Greenhouse Gas (GHG) Emission in Road Construction. The workshop was inaugurated by Sh. K.K. Kapila, Chairman and Managing Director,



Intercontinental Consultants and Technocrats Pvt. Ltd. (ICT) New Delhi and Chairman, IRF – Geneva and attended by about 50 participants from different organizations. Presentations were made by the scientists CRRI and private organizations.



## Renewal Audit of ISO 9001:2008 – Quality Management System

The Renewal Audit of ISO 9001:2008 - Quality Management System certification was carried out by a team of auditors from Bureau of Indian Standards on December 11-12, 2013, which recommended that the Institute's Quality Management System is effectively working and is in place as per the requirements of ISO 9001:2008.



## Workshop on “Preparation of Roadmap for R&D and Practices for Use of Fly Ash in Roads, Embankments, Bridges and Allied Structures”



A workshop on “Preparation of Roadmap for R&D and Practices for Use of Fly Ash in Roads, Embankments, Bridges and Allied Structures”, was held on March 21, 2014, at CSIR-CRRI. The workshop was organised as part of FAU-DST Project, and was aimed to capture the existing & new technologies for the use of fly ash in roads, embankments, bridges and allied structures, with an overall objective to prepare roadmap for maximizing fly ash utilization.

The workshop provided a forum for producers of fly ash and prospective consumers along with the policy-makers and other stakeholders to come to a

common platform and focused mainly on developments in R&D and fly ash utilization in areas related to road infrastructure. In addition, opportunities and future plans to maximise gainful utilisation of fly ash in this sector was discussed, keeping in view the impediments being faced due to shortage of natural earth, other raw materials and environmental aspects to meet the ever-increasing transport infrastructure requirements of the society.

The workshop covered all pertinent issues including environmental, regulation, disposal challenges and practical methods of fly ash management for each technology.

A number of participants gave suggestions during the workshop. The valuable information and suggestions gathered during the deliberations of this workshop on wider applications will help in compiling a baseline document on fly ash utilisation including its safe management for roads, embankments and bridges & allied structures. The workshop was appreciated by the participants.



## Communal Harmony Campaign and Fund Raising Week

A Communal Harmony Campaign and Fund Raising Week was observed during 19-25, November, 2013 and along with the Flag Day on 23th November, 2013. During the course of this week, National Integrity pledge was taken by the staff members on 19th November, 2013. The flag day was observed on 25th November, 2013 and the funds were collected from the staff members who donated generously.



## VISITORS

- i. Hon'ble Minister of Road Transport & Highways, Govt. of India, Sh. Oscar Fernandes ji, visited CSIR-Central Road Research Institute, Mathura Road, New Delhi on Oct. 31, 2013. He was received by Dr. S. Gangopadhyay, Director, CSIR-CRRI and other senior officials of the Institute. The Hon'ble Minister visited various laboratories of the Institute including library and showed keen interest about the facilities available. He also visited the Accelerated Pavement Testing Facility (APTF) and expressed that this facility should be adequately utilized since the research carried out, using such a

facility will certainly help the nation in a number of ways.

A meeting was also held between the Hon'ble Minister, MoRTH; Director, CRRI and Heads of the divisions / advisors of various R&D Division / Areas of the Institute. A presentation was made by the Director, CSIR-CRRI about the activities of the Institute. Thereafter, Hon'ble Minister addressed the gathering and said that he is honoured to be in CSIR-CRRI for interaction with the scientific people. He opined that the scientific community is giving a lot to the nation but is getting less in return.



Glimpses of Visit of Hon'ble Minister at CRRI

- ii. **Sh. Bob Kluttz** (Sr. Scientist, Innovation Centre in Houston, USA) visited the Institute and made a presentation on “Highly Modified Asphalt (HIMA) which can be used for designing the pavement with reduced thickness”
- iii. To celebrate “Road Safety Week” a presentation on “Impact of Overloaded Vehicles on Road Safety and Efficacy of Weigh in Motion System to Screen Overloaded Vehicles”, was made by Sh. D. Pranav (CEO, M/s. Vishwakarma Scales Pvt. Ltd.,).



## EXHIBITIONS

The Institute participated in the following exhibitions and display CRRRI achievements and expertise through charts.

### Exhibition during IRF Regional Conference

CRRRI participated in Technical Exhibition organized during 8th IRF Regional Conference on Road Infrastructure for Safe Mobility at India Expo Centre, Greater Nodia, Delhi, NCR from 3-5 Oct., 2013.



### Technical Exhibition during IGC-2013

CRRRI participated in Technical Exhibition organized during Indian Geotechnical Conference, IGC-2013 at IIT Roorkee, from Dec. 22-24, 2013.



### Exhibition during 74th Annual Session of the Indian Roads Congress

The institute actively participated in Technical Exhibition organized during 74th Annual Session of the Indian Roads Congress held at Guwahati from January 18-22, 2014.



### Exhibition during Indian Science Congress

CRRRI participated in Exposition of CSIR during Annual Session of the Indian Science Congress at Jammu from Feb 3-6, 2014.

### Exhibition on Envision - 2025

CRRRI participated in Technical Exhibition organized during 25th National Convention on Environmental Engineering & 3rd International Conference and Exhibition on Envision - 2025 at Chennai from March 12-14, 2014.



## TRAINING PROGRAMMES/COURSES ORGANISED/CONDUCTED

### A. Regular Refresher Courses

The following training courses/programmes were organized for the practicing Engineers as part of regular refresher courses.

- “Geotechnical and Landslide Investigations for Highway Projects” from October 21-25, 2013.



- “Rigid Pavements: Design, Construction and Quality Control Aspects” from November 18-22, 2013



- “Bridge Design and Construction” from November 25-29, 2013



- “Environmental Impact Assessment (EIA) and Environmental Clearance Process for Road & Highway Projects” from 02-05, December, 2013



- “Pavement Evaluation Techniques & Their Applications for Maintenance & Rehabilitation” from December 16-20, 2013



- “Geo-Spatial Technology (GIS, GPS, RS etc.) for Roads and Transportation” from Jan. 06-09,



### B. Customized/Special Training Programmes/Courses

- Customized Training Programme on “Flexible and Rigid Pavements for Rural Roads under PMGSY Scheme” for the AEs to SEs of RED, UP organised at CRRI, New Delhi (in two batches).
  - October 03-08, 2013
  - February 17-22, 2014.





- Training Programme on “Quality Control and Quality Assurance for Roads and Bridges” for the engineers of PWD, Uttarakhand from February 10-11, 2014 at Dehradun.
- CRRI imparted practical training on Geotechnical Engineering an environment management aspect to 30 Students of University of Science & Technology and RIST, Meghalaya in two batches.



- On the request of ADB Srilanka an International Training Course on HDM-4 was organized for officers of Northern Provinces Road Development Authority from October 7-11, 2014 at Srilanka. During the programme, Hands on Experience on HDM Software was given to the participants for arriving decision making strategies for implementation of Highway Projects.



## AGREEMENTS/MOUs

### MoU Signed

- With Indian Institute of Engineering Science & Technology Shibpur, West Bengal (formerly Bengal Engineering and Science University (BESU), on 16th December 2013.
- With CSIR-Tech Private Limited (CTPL) at Pune on 6th Feb. 2014, which is a private limited company based in NCL Campus, Pune. CSIR-Tech is in the business of providing consultancy services to various constituent laboratories of CSIR on commercialization of their technologies, besides leveraging private investment and entrepreneurial skills. This MoU



Signing of MOU in progress

has been signed not only to support CSIR-CRRI in its endeavor to commercialise its technologies but also to supplement Institute's ongoing efforts in technology commercialising portfolio.

### Agreements Signed

- With U.P. Irrigation, for Quality Assurance of Construction of Bridges over Agra Canal in Faridabad, on November 15, 2013.
- With PWD/R&B Dept., Govt. of Sikkim and Bitchem Asphalt Technologies Limited for Cold Mix Technology for Construction and Maintenance of Roads, on 26th March, 2014.

### Patents Filed

- Patent filed on “Stepwise Repeated De-Stabilisation and Stabilisation of Highly Collapsible Soil Mass by 'Soil Nailing Technique' used for Construction of Railway/Road Underpass”, by Kanwar Singh and others
- Copyright on “Understanding of Real World Driving Cycle and its Development”, by Ravinder Kumar, Kamini Gupta, B.K. Durai, Purnima Parida
- “Design and Development of Pothole Repair Machine” by Ms. Shiksha and others



## AWARDS

### IGS – Shri R.N. Prasad Biannual Award

Shri R.N. Prasad Biannual Award to S/Shri R.K. Panigrahi, U.K. Guru Vittal, P.S. Prasad, Sudhir Mathur and Dr. Pankaj Gupta for the paper entitled, 'Investigation and Design for Restoration of Hill Slope in Mizoram' published in the Indian Geotechnical Journal, Vol.41, No.4, October 2011 (pp.215-225) which has been adjudged as the best paper on 'Slope Stability and Land Slides'. The award was presented during Indian Geotechnical Conference held at Roorkee in Dec 2013.



### IGS – H.C. Verma Award

HC Verma Award for Innovative Instrument Design for large scale Pull-out Test Apparatus [P S Prasad, Dr. S.Gangopadhyay, and Prof.M.R.Madhav], Dec 2013 given by Indian Geotechnical Society, New Delhi

### IRC Commendation Certificate

R&D Paper entitled 'A Laboratory Study of Construction and Demolition Waste for Use in Road Works' jointly authored by S/Shri U.K. Guru Vittal, Smt. Farhat Azad, J. Ganesh, Binod Kumar and Sudhir Mathur, published in IRC Highway Research

Journal, Volume 5 No.1, January 2012 has been awarded a 'Commendation Certificate' by the Indian Roads Congress. The award was presented during IRC Annual Session held at Guwahati in Jan 2014.

### Best Hindi Language Paper Award

Paper entitled 'Gujarat ke Kachchwale Tatvarti Ilakhe me Bandh Ke Nirman' authored by S/Shri U.K.Guru Vittal, Alok Ranjan and P.S.Prasad was awarded Best Paper Award on 'Hindi Diwas' (14 Sep 2013) at CRRI.

### CSIR - Outstanding Achievement Award

Outstanding Achievement Award for ERP Implementation (Team.. A. Saurikhia, D.Ravinder, S. Mariappan, Ms. Kamla Masih, Ms. Neeta Kumari, Ms. Preeti Sinha, Virendra Dussia, Avanish Kumar) given by DG, CSIR on September 26, 2013.

Outstanding Achievement Award for distinguished contribution and meritorious achievement as Project Champion for ERP Implementation to Ms. Preeti Sinha, Ms. Neeta Singh and Virendra Dussia given by DG, CSIR on September 26, 2013.



- Dr. P.K. Jain and Dr. P. Lakshmy, Chief Scientists were elected Council Member of IRC during Annual Session of IRC at Guwahati in 2014.

## SPORTS

### A Tribute to Sh. Sachin Ramesh Tendulkar

CSIR-CRRI organised a special function on November 19, 2013 to pay tribute to Sh. Sachin Ramesh Tendulkar. Dr. S. Gangopadhyay, to pay tribute to him. A presentation on Sh. Sachin Tendulkar, was made by Dr. S. Velmurugan, Member, CRRI Recreation Club & Head TES.



Dr. S. Gangopadhyay paying Tribute to Sh. Sachin R. Tendulkar

## STAFF NEWS

### Re-structuring of Pavement Engineering Area and Geotechnical Engineering Area

#### A. Pavement Engineering Area

The present nomenclature of FPD, RPD & PED stands abolished. The area pavement engineering area has now been divided into the following functional groups:

1. *Pavement Design & Rehabilitation*  
Sh. M.N. Nagabhushana, Principal Scientist  
(Group Coordinator)
2. *Pavement Materials & Construction Technologies*  
Sh. Sunil Jain, Principal Scientist  
(Group Coordinator)
3. *Road Asset Management*  
Dr. Devesh Tiwari, Principal Scientist  
(Group Coordinator)

#### Advisory Group of Pavement Engineering Area

- Dr. P.K. Jain, Chief Scientist (Area Advisor-R&D)
- Sh. B.M Sharma. Chief Scientist (Area Advisor-Consultancy & Management)
- Dr. Sangita, Sr. Principal Scientist
- Sh. K. Sitaramanjaneyulu, Sr. Principal Scientist
- Sh. J.B. Sengupta, Sr. Principal Scientist
- Sh. S.P. Pokhriyal, Sr. Principal Scientist (Retired on 31st January, 2014)
- Sh. Sudesh Kumar, Sr. Principal Scientist
- Sh. R.K. Srivastava, Sr. Principal Scientist

#### B. Geotechnical Engineering Area

The present GTE Division has been divided into the following functional groups:

1. *Ground Improvement*  
Sh. Vasant G. Havangi, Sr. Principal Scientist  
(Group Coordinator)
2. *Landslide Management*  
Sh. Kanwar Singh, Sr. Scientist (Group Coordinator)

#### Advisory Group of Geotechnical Engineering Area

- Sh. Sudhir Mathur, Chief Scientist (Now on Deputation to NHAI)
- Dr. Kishor Kumar, Chief Scientist (Area Advisor-Consultancy & Management)
- Sh. Jai Bhagwan, Chief Scientist (Area Advisor - R&D)
- Sh. U.K. Guru Vittal, Sr. Principal Scientist

### New Heads of the Divisions

- Dr. Neeraj Sharma, Principal Scientist, took over the charge of HoD, Environmental Science Division w.e.f. 30.01.2014 on relinquishing the charge by Dr. Anil Singh, Chief Scientist.
- Sh. Jai Bhagwan, Chief Scientist took over the charge of HoD, Horticulture w.e.f. 30.01.2014.

### New Joinings/Retirements/Transfers/Promotions and Assessments

#### New Joinings

Welcome on joining the Institute

- |   |            |
|---|------------|
| 1. Meesam Zaidi,<br>Assistant (General) | 03.03.2014 |
|---|------------|

#### Transfers

- |  |            |
|--|------------|
| 1. Ms. Kumari Neeta,<br>S.O.-G transferred to CSIR           | 03.11.2013 |
| 2. Sh. H. Changloi, F&A.O.<br>transferred to HRDC, Gaziabad  | 01.11.2013 |
| 3. Sh. Sanjay Rawat, S.O.-G,<br>transferred to IIP, Dehradun | 28.02.2014 |

#### Promotions and Assessments

Congratulations to the following Scientists who have been promoted to the next higher scales/grades.

Name	Post to which Promoted
1. Dr. R.N. Dutta	Sr. Principal Sct.
2. Dr. Neelima Chakrabarty	Sr. Principal Sct.
3. Dr. S. Velmurugan	Sr. Principal Sct.
4. Dr. Vasant G. Havangi	Sr. Principal Sct.
5. Dr. Suraj Prakash	Sr. Principal Sct.
6. Dr. Sukumar Saha	Sr. Principal Sct.
7. Mrs. Lalita Jangpangi	Principal Sct.
8. Sh. Binod Kumar	Principal Sct.
9. Sh. Ashok Kumar Sagar	Principal Sct.
10. Sh. Pradeep Kumar	Principal Sct.
11. Dr. K. Ravinder	Principal Sct.
12. Sh. Ambrish Saurikhia	Principal Sct.
13. Sh. Phool Chandra	Section Officer (G)

## Retirements

Staff Welfare Committee of CRR I gave warm farewell party to the following staff members on their retirements.

- |  |    |            |
|--|----|------------|
| 1. Sh. S.N. Dwivedi, Sr. Technician            | -- | 31.10.2013 |
| 2. Dr. Renu Mathur, Chief Scientist            | -- | 31.12.2013 |
| 3. Dr. N.K.S. Pundhir, Sr. Principal Scientist | –  | 31.12.2013 |
| 4. Sh. Shivnanden Prasad, Sr. Technician       | –  | 31.12.2013 |
| 5. Sh. S.P. Pokhriyal, Sr. Principal Scientist | –  | 31.01.2014 |
| 6. Sh. Randhir Singh, Security Assistant       | -- | 31.01.2014 |
| 7. Sh. Harish Kumar, Sr. Technician            | -- | 28.02.2014 |
| 8. Sh. Ved Prakash, Sr. Technician             | -- | 28.02.2014 |
| 9. Sh. Ashok Kumar, Sr. Steno                  | -- | 31.03.2014 |



## Obituary

With profound grief and sorrow, we inform the sad demise of our colleague, Sh. Deep Chand, Gr-I, who left us for his heavenly abode on 28th December, 2013. We deeply mourn the death of Sh. Deep Chand and convey our heartfelt condolences to the bereaved family. We pray to the Almighty that his noble Soul be blessed with eternal peace.

# CSIR-CRRI TRAINING PROGRAMMES FOR THE YEAR 2014-2015

TITLE OF THE COURSE	DURATION WITH DATES	COURSE FEE + 12.36 % S.T.	COURSE COORDINATOR
<b>A. PAVEMENT ENGINEERING &amp; MATERIALS</b>			
● Design, Construction and Maintenance of Flexible Pavements	21-25 July, 2014	Rs. 10,000/-	Sh. M.N. Nagabhushana
● Rigid Pavements: Design, Construction & Quality Control Aspects	08-12 Sep., 2014	Rs. 10,000/-	Sh. Binod Kumar
● Pavement Evaluation Techniques and their applications for Maintenance and Rehabilitation	24-28 Nov., 2014	Rs. 10,000/-	Sh. Pradeep Kumar
<b>B. ROAD DEVELOPMENT PLANNING &amp; MANAGEMENT</b>			
● International Course on Dissemination of HDM-4	15-27 Sep., 2014	Rs. 30,000/-	Dr. Divesh Tiwari
● Geo-Spatial Technology (GIS, GPS, RS etc) for Road and Transportation	05-08 Jan., 2015	Rs. 12,000/-	Dr. A.M. Rao Dr. B.K. Durai
<b>C. GEOTECHNICAL ENGINEERING</b>			
● Geotechnical and Landslide Investigations for Highway Projects	25-29 Aug., 2014	Rs. 10,000/-	Sh. Kanwar Singh
<b>D. BRIDGES &amp; STRUCTURES</b>			
● Bridge Diagnostics, Performance Evaluation and Rehabilitation	16-20 June, 2014	Rs. 10,000/-	Dr. Rajeev Garg
● Bridge Design and Construction	13-17 Oct., 2014	Rs. 10,000/-	Dr. Lakshmy P.
<b>E. TRAFFIC &amp; TRANSPORTATION PLANNING</b>			
● Transport Planning & Economics	07-11 July, 2014	Rs. 10,000/-	Dr. K. Ravinder
● Traffic Engineering & Road Safety Audit	04-08 Aug., 2014	Rs. 12,000/-	Dr. S. Velmurugan
● Environmental Impact Assessment (EIA) and Environmental Clearance Process for Road & Highway Projects	10-13 Nov., 2014	Rs. 12,000/-	Dr. Niraj Sharma

### Customized Tailor Made Programmes

In addition to the above CRRI also organises customized tailor made programmes as per the clients requirements.

**Course Fee:** The course fee as indicated above is payable in advance by crossed bank draft in favour of “Director, Central Road Research Institute” payable New Delhi.

### For further information & sending nomination contact:

**Shri T.K. Amla,**  
**Head & Course Organiser,**  
**Information, Liaison & Training,**  
CSIR - Central Road Research Institute,  
P.O.CRRI, Delhi-Mathura Road,  
New Delhi – 110 025

Phone: 91-11-26921939,  
Fax: 91-11-26845943, 26830480  
Telefax: 91-11-26921939  
E-mail: tkamla.crri@nic.in, mkmeena.crri@nic.in  
Website: crriidom.gov.in

### सम्पादक मंडल

संरक्षक : डा. एस. गंगोपाध्याय, निदेशक

सम्पादक :

श्री टी. के. आमला, मुख्य वैज्ञानिक एवं प्रमुख, सूचना, सम्पर्क एवं प्रशिक्षण, श्री बी. एम. शर्मा, मुख्य वैज्ञानिक  
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